



The American Astronomer

THE QUARTERLY NEWSLETTER OF
THE AMERICAN ASSOCIATION OF AMATEUR ASTRONOMERS

Volume VI, No. 1

December 2001



Leonid Meteor Shower — November 17, by Ron Zincone



Saturn Occultation — November 30, by Isaac Kikawada



Partial Solar Eclipse — December 14, by Ed Flaspoepler

AAAA Sky Watchers Keep Busy

The fall months this year have been particularly busy for amateur astronomers. And AAAA members have kept up with the action. Meteor showers, planetary occultations, comets, and solar eclipses have kept everyone rushing for their telescopes and camera equipment.

Leonid Meteor Shower—November 17

The Leonid meteor shower on November 17 was very widely observed this year, and from all reports did not disappoint.

In Topeka, KS, our intrepid Brenda Culbertson reported that weather conditions were “really lousy” all

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Roseann Johnston Earns Messier Certificate

Roseann Johnston of Vincent, AL, earns the AL's Regular Messier Certificate and pin for observing and logging 80 Messier objects using 10x50 binoculars and a 4.5-inch reflector telescope.

Glenn L. Johnson Earns Messier Certificate

Glenn Johnson of Denton, TX earns the AL's Honorary Messier Certificate and pin for observing all 110 objects on the Messier list. Glenn used a 6-inch Newtonian telescope for his observations.

Matthew Andrew Earns Binocular Messier Certificate

Matthew Andrew of Norwalk, Ohio, earns the AL's Binocular Messier Certificate and pin for observing 51 Messier objects using his Orion Vista 10x50 binoculars.

Leopoldo Andriao, Junior Earns Binocular Messier Certificate

Leopoldo Andriao, Junior, of Araraquara, Sao Paulo, Brazil, earns the AL's Binocular Messier Certificate and pin for observing 50 Messier objects using his 10x50 Bushnell binoculars.

Congratulations to all four of these fine observers for a job well done!

Correction: Bob Brill, who earned a Binocular Messier Certificate in September, was incorrectly identified as Bill Bree in the last newsletter.



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OF THE AMERICAN
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Issued quarterly in December, March, June and September by The American Association of Amateur Astronomers as a service to its members.

All members are encouraged to submit articles and photographs for publication. Send all materials for publication to the Editor at the address below.

The opinions expressed by contributors to the AMERICAN ASTRONOMER do not necessarily reflect the opinions of the AAAA or the Editor. Articles representing supporting or opposing views will be published promptly after receipt.

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AAAA Members: When you have completed your AL observing projects, don't forget to submit your observation logs to the AAAA for official certification. Be sure to send COPIES of your records ONLY. Do NOT send originals of your observing logs.



**A Member
Society of
The
Astronomical
League**

A Word from the AAAA

Things stay busy here at the AAAA. Between keeping up with what's happening in the astronomical community, corresponding with the membership via e-mail and snail mail, and just doing the day to day business of running the AAAA, there is always something to do.

Again, we are very proud to announce that several AAAA members have earned Astronomical League observing certificates. Their names and certificates are listed on the front cover. Observing is one of the most rewarding aspects of being an amateur astronomer, and as this newsletter attests, AAAA members are busy with their astronomical projects. If you are one of these members, and have not yet received your certificate, do not despair. We will have that certificate and pin in the mail to you soon.

We have been experiencing an increasing number of new members in the AAAA. Since last May alone, we have added nearly 100 new members. We extend a hearty welcome to all of you. And for many of you, since you received an AAAA membership as part of your Christmas gifts last year, it is also time to renew. We have already sent out renewal notices, and hope you have gotten yours already. We look forward to receiving your renewal soon.

Plans for StarCon 2002 in Topeka are coming along. Convention Chairman Brenda Culbertson has been planning some fine activities for the convention, along with some interesting speakers. It is getting to be time to start making plans for that vacation next summer. You will be receiving a StarCon 2002 registration packet in the mail soon. We hope you will be able to set aside a few days to spend with us to share astronomy.

*Ed Flaspoeehler, President
American Association of Amateur Astronomers*

Magazine Subscriptions

A regular subscription to Sky & Telescope magazine is \$39 per year, but you can get it at the club discount through the AAAA for only \$30 per year. Astronomy magazine is also \$39 per year, but the club discount rate is only \$29. Subscribe to these magazines or extend your current subscription on the AAAA web page. Or send a check for the correct amount, made out to AAAA, to:

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This edition of the American Astronomer newsletter can be downloaded in PDF format from the AAAA website. Print it off on your own color printer or read your club's newsletter online in full color!

www.corvus.com/a4-news/a01-dec.pdf

OBSERVING IS THE HEART OF AMATEUR ASTRONOMY

The American Association of Amateur Astronomers provides the AL's FREE Observe Programs on our website in Adobe Acrobat Portable Document File format at no charge as a service to members of the AAAA, the Astronomical League, and the astronomical community at large. The Observing Programs which require a published manual must still be obtained from Astronomical League Sales, PO Box 572, West Burlington, IA 52655. (You can now purchase AL manuals online at the AL Sales website, <http://www.astronomicalleague.com>.)

AAAA encourages you to download these PDF files for your own use, and to distribute them, in either electronic or printed form, to your friends and other interested observers, as an encouragement to further participation in amateur astronomy.

AAAA members are eligible to earn any of the AL's observing awards. We encourage you to participate in all of the programs which interest you.

AAAA Members who have completed AL observing projects should submit their observations directly to the AAAA for certification. Be sure to send COPIES of records ONLY. Do NOT send original photographs or observing logs.

www.corvus.com/aa01006.htm



Pieces of a Russian Proton rocket disintegrated in Earth's atmosphere on December 1st, startling sky watchers in western Europe and at least seven US states.

The Space Junk Event

During the weekend of December 1st, a flurry of sensational fireballs startled sky watchers in western Europe and parts of the United States. Traffic stopped. Airline pilots gaped from cockpit windows. Emergency telephone lines were jammed. And, no, it wasn't Santa losing control of his sleigh!

What everyone saw was the re-entry of one of two pieces of a Russian space launch on Dec 1, 18:40 UT, that put some Russian equivalent of GPS satellites into orbit. The catalog number is 26990, 2001 53D to be precise. The event was quite spectacular. There was lots of activity and some reports on the meteorobs mailing list. Another piece of junk from the launch re-entered over Western Europe around 22:30 UT Dec 1, just to confuse things.

The space junk reentry was apparently seen from Texas to Eastern Nebraska. It broke up into about 30 separate pieces, all leaving a trail of sparks, which were described as described it as a claw of sparks on the night sky, lasting from 3 to 4 minutes in its track.

Eye-witness reports say that the stuff "sparkled" with different colors, red and white things flying across the sky leaving trails. It was also described as "lots of little comets all in formation." A meteorologist in Texas said she saw them, and thought it might be an asteroid breaking up.

Others say they only saw yellow, but

they were seeing this stuff through a great deal of atmosphere, so other colors may have been filtered out, similar to what happens when sunlight turns more reddish as the sun starts to set. Observers reported that the objects were moving south to north in the west.

AAAA member Brenda Culbertson in Topeka, KS, reports that she was busy fielding questions all day Sunday about the space junk, even though she did not see it. Two television stations, email, phone calls and people in general all contacted her to get a report. She says she was so busy fielding calls that she did not have much time to do some other work.

AAAA member Larry Robinson in Olathe, KS, reports that in the Kansas City area, the media got on this story pretty fast. By Sunday night, it was very well explained, complete with video from Stillwater, Oklahoma. Larry taped everything about the event that he saw on TV.

Tony Beresford commented that people who saw this event were very lucky, and that they are much more likely to see a really bright meteor.

You can read the full story about the Space Junk Event at NASA Science News for December 3, 2001, http://science.nasa.gov/headlines/y2001/ast03dec_1.htm?list613455

The American Association of Amateur Astronomers teams up with Bushnell Sports Optics and the David Chandler Company.

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We are excited that the American Association of Amateur Astronomers is able to make our products available to you through their AstroMax Online Store. We hope they will point you on your way as you begin to explore the universe.

David and Billie Chandler

PS: Be sure to take a look at the AstroMax Introductory Astronomy Kit, which includes our First Light Astronomy Kit, a pair of Bushnell Powerview 10x50 Binoculars, and full membership in the American Association of Amateur Astronomers. It's a great way to get started in astronomy for less than \$100! It makes a great gift, too.

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Save the Milky Way

Telescopes provide residents in your community with a positive incentive to Save the Milky Way for their children. The non-profit Dark Sky Institute is resolved to:

- * Make telescopes available to high school students across America.
- * Reduce wasteful nighttime lighting.
- * Reclaim the Milky Way's breathtaking luster and luminosity, and
- * Restore a dark night sky over America by the year 2020.

On my Web site is the National Save The Milky Way Awareness Ribbon page at: (<http://www.darkskyinstitute.org/DarkSky/ribbon.html>). I have distributed about 3000 pieces of the ribbon to astronomers and nonastronomers around the country, including guests attending the 2001 Texas Star Party. You may be able to purchase ribbon locally, or you can e-mail me for it. The ribbon is a very inexpensive way to express our desire for dark skies.

No doubt you've heard or seen parts of all of Meredith Willson's musical play / movie THE MUSIC MAN. But you haven't seen my version of his YA GOT TROUBLE and 76 TROMBONES.

I have performed locally to acclaim and would be honored to perform for astronomers, NONastronomers, and students in your area. The goal of my performance is to spark interest in your community in my 'SCOPES in SCHOOLS project. Astronomy (and NONastronomy) organizations are currently scheduling performance dates for 2002. Please reserve a date soon. I promise the audience will get a BIG BANG out of it!

Excerpts of my script are available on my web site at: <http://www.darkskyinstitute.org/DarkSky/Willson.html>. All I require is an audience and 30-35 cents per mile (depending on gas prices) for transportation (or flight ticket if it's less expensive) and a place to sleep and eat with a local club member.

My Save the Milky Way plans will work in your community. Several communities are already using my 'SCOPES in SCHOOLS project to darken their night skies. It works.

Thank you and...

Sunny Days and Milky Way Nights.

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Meteors, Planets, and Eclipses

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day and night preceding the meteor shower, until around 2:30, when "we saw a hole in the clouds. We could see stars! The hole grew larger until the whole sky was clear. By 3 a.m., practically the whole sky was clear and we were watching meteors."

It started slowly, she says, but soon increased in intensity. By 3:30 the sky was swarming with meteors. By 4:00 the appearance of meteors radiating from Leo was so numerous, that at one time Brenda counted six showing up at the same instant. In fact, the fireballs were so numerous and intense, the neighbor's roosters began to crow and the coyotes began to howl.

According to Ron Zincone in Rhode Island, the peak intensity seemed to start at 4:27 a.m. and lasted until about 5:40 a.m., with the greatest intensity from 4:57 to 5:30. In this time frame, Ron visualized 430 meteors. If this is accurate, then the team of Asher and McNaught who predicted the peak at 4:55am with a ZHR of 800 seems to be close to the mark. During the peak, he says, the meteors were everywhere! At times 2 or 3 in a row, sometimes 5 at once and sometimes parallel.

Ron says this event definitely was the greatest meteor event he has ever witnessed, but not quite at storm levels. He must also concur with everyone's else's report that it certainly was cold. Temperatures were in the lower 20's at his house. Ron says, "I am just very pleased that the weather cooperated and I got to witness this astronomical event with everyone else. We really lucked out on the weather."

Saturn Occultation—November 30

The Saturn occultation by the moon on November 30 took place in the early evening just after moonrise.

AAAA President Ed Flaspoepler reported clear Skies in Dallas, TX, and the moon came up above the trees at his location just in time. The moon slowly slipped over the top of Saturn, and it fully disappeared from view about 6:32 CST. The moon uncovered Saturn again about 7:16 CST, and the planet re-emerged into view from the opposite edge of the moon.

In San Jose, CA, it was rather cloudy and turned to rain soon after the occultation, but Isaac Kikawada did what he could and came through again. You can see his photo on the front cover. Yes, he became a little naughty—he superimposed a properly exposed moon on his original image: a bad day for an occultation!

Brenda Culbertson video taped the Saturn Occultation from Crane Observatory in Topeka, Kansas. If anyone would like a

copy, you can send her a blank tape and enough postage to send it back. She taped the disappearance and the reappearance. Reappearances are always trickier, but she got this one.

This occultation was the second such event this Autumn. Early on the morning of September 10, 2001, an occultation of Saturn by the Moon took place just before dawn at 4:54:41 a.m. PDT. There will be another Saturn occultation on the morning of December 28 if you missed this one.

Comet LINEAR

Doug Kniffen in Missouri observed Comet LINEAR on December 1. He says the comet was readily visible in 10X50 binoculars. Coma seemed about 20 arcminutes across without any central condensation or nucleus visible. The tail was also seen. The coma appeared only slightly brighter than the tail, which seemed to be mostly dust and had a ragged looking end. Total length (head and tail) was just about 2 degrees.

Roseann Johnston in Vincent, AL, observed LINEAR on December 2. She went out to feed the kitties and took her binos with her. So she saw Linear and says it was really neat. "Didn't even have to scan the sky. I'd checked my atlas and pointed my binos in the area near Cetus where it was to be, and there that rascal was!!! Fuzzy white with a little white tail. And while I was looking at it, a meteor just happened to go past in my field of view. That was cool. Then, let's see here, oh, I saw Vesta hanging around in Taurus. Also saw a yellow meteor zip to the southeast about 15 degrees down below alpha pisces. That one was pretty, too."

Comet LINEAR is on its way out, so if you missed it, you missed it.

Partial Solar Eclipse—December 14

It was clear for the eclipse in Dallas, TX, so Ed Flaspoepler took his Meade 2045 4-inch Schmitt-Cassegrain telescope out into the front yard, which has a better tree line, threw on the solar filter, and shot the picture on the front cover right around eclipse maximum at about 3:55 PM CST.

Isaac Kikawada in Northern California also managed to capture the eclipse on film, but maximum eclipse at his location was only about 25%, while in Dallas, it was more than 35%.

According to the *RASC Observer's Handbook 2001*, this was an annular eclipse, and you could have observed totality in San Jose, Costa Rica. At that location, full annularity lasted about 3 minutes and 19 seconds.

AAAA News and Member Activities

Ron's Astrophotography Website!

www.geocities.com/astropho1/index.htm



Ron Zincone with his new toy, the Celestron G8, which he purchased in May 2001

Hello! My name is Ron Zincone and I live in Richmond, Rhode Island, not far from Yawgoo Valley, between Exeter and Hope Valley. I live in an area that is very rural, so there are no street lights, which makes for a natural dark sky site, perfect for astronomical observations and astrophotography. It is truly a pleasure to be able to deliver my images to you on my website, since I feel that our dark skies are in danger of becoming extinct due to the ever growing light pollution sources. Generations to come may never get to witness such celestial grandeur as we are privileged to see by looking up in the night sky, without traveling great distances to remote areas. It is my hope and pleasure that these images will help not only to capture and reveal the splendor of the universe, but also archive and preserve our night sky.

The purpose of my website is to display my images and techniques with my hobby called astrophotography. This is a combination of photography and astronomy and is a spinoff from astronomical observing. I have been enjoying this great hobby now for 4 years. My website features some of my best images and related information as well as astronomical information.

If you enjoy astronomy and/or photography, or if you ever wondered what it would be like to capture images of the night sky, then this website is the trek for you. I hope you enjoy the images on my pages as much as I enjoy sharing them with you.

If you should have any questions or would like to leave me feedback, please do not hesitate to email me: rzincone@uri.edu.



Leonid Bolide 11-18-0, 50mm, f2/2.8, 1-3 min. This very bright Leonid Bolide/fireball appeared just to the upper part of the constellation Orion.



July 11, 1999 Circumpolar Star Trails. 24mm, f/4, 1 hour, 9:55 pm, Elitechrome 400. Notice Polaris in the center and the easily identifiable airplane trails extending from my house through the center of the image.



10/18/99 Time Lapse of 1st Qtr. Moon. 24mm, f2.8, 6:40 pm, Kodachrome 64 1st exposure was at 1 second at 6:40 pm to get the twilight. Second exposure was at 8:30 pm. The remaining images, to capture the setting moon, were exposed at 1/2 to 1 second.

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Winter Observing

by Brenda Culbertson
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www.geocities.com/ksstargazer

The Winter Season provides steady, cold air; long, early nights; and many celestial objects to view. When you set out to observe in the cold temperatures, make sure you follow cold weather safety precautions and keep safe. Also, let your telescope cool off if it has been stored in the house. It only takes a short while to do this. By setting the tube in place and taking the covers off, the tube should reach ambient temperature in a few minutes.

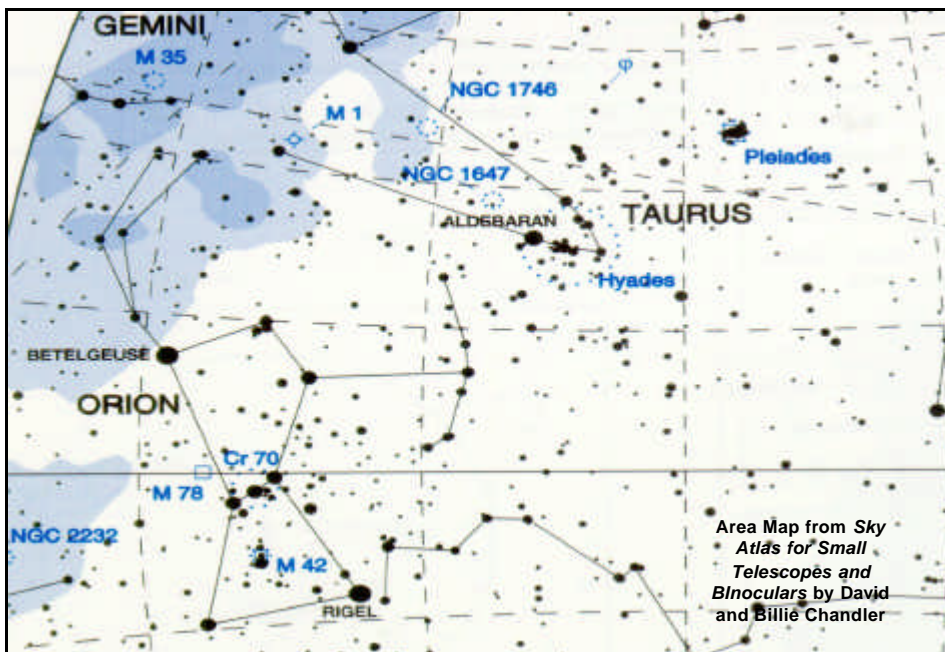
Before you start observing, set up a plan. List a few objects you want to view and check them on your charts. Make sure you have your charts laid out, or have pages marked, so you can get to the place where your objects are described without having to fumble around much. If you are working on a list, be realistic when setting out to find an object. If the object is due to set shortly after sunset, look for it first and don't be disappointed if you don't find it right away. It will be there the next night as well.

Document the objects you see. You can make notes in an observing notebook, with a tape recorder, or by photographs. Keep track of dates, times, and objects as you view them. A short description will help as well. You can refer back to your notes later and transcribe them into a more detailed format at a more convenient time.

Getting started is half the battle of observing in the cold. Overhead in the Winter Season are some favorite objects to observe. Described below are some of these objects, ranging from easy to difficult, for you to hunt, observe, and document. Start with the easy list and gradually conclude the season with a few of the difficult objects. There are many, many objects to observe in the Winter sky, but these will get you started.

Easy Objects

Leading in the Winter constellations is Taurus, where you will find the **Pleiades Star Cluster**, also known as **M45**. This cluster is a naked eye object and is easy to see even inside city limits. Known as the Seven Sisters, six or seven of the brighter stars are easily discernible without optical assistance. From a remote observing site, 12 to 13 stars can be resolved with the naked eye by most people. In binoculars, a much more dazzling sight can be seen, with many more members showing up, along with a light blue nebulosity. In a low powered telescope even



Area Map from *Sky Atlas for Small Telescopes and Binoculars* by David and Billie Chandler

more stars can be seen. The average magnitude of stars in the Pleiades is about 1.5.

A second object to observe in Taurus is the **Hyades**. The Hyades is the prominent star cluster making up the V of the bull's head. Binoculars will reveal more members of this group, with Aldebaran, a red giant, dominating the view.

The constellation of Orion gives us much to view. An easy object to find and view is the **Great Orion Nebula**. The Orion Nebula, also known as **M42**, is one of the most observed objects by astronomers of all levels, and has many details to see. It is a naked eye object, but shows more and more detail as the observer views through more and more magnification. It is located in the sword of Orion and is evident by the bluish nebulous area. A closer view will show wisps of nebulous material extending around a central group of stars called the Trapezium, which is a moderately difficult object.

Another naked eye star cluster, **M41**, can be seen in Canis Major. Its brightest members range between 7th and 8.5th magnitudes. A few of the members of this cluster can be picked out in binoculars, but seen through a telescope, it provides a beautiful array of stars.

Moderately Difficult Objects

Another object in Taurus is **M1**, the **Crab Nebula**. The Crab Nebula resides between the horns of the bull and is best seen during a clear, dark, steady night. A telescope of at least eight-inches of aperture is needed to view this object well, but smaller instruments have been used. The Crab Nebula is the remnants of a supernova, and appears as an elongated oval, fuzzy patch with no star. The Crab Nebula is of 9th magnitude.

The **Trapezium** is seen at the core of

the Orion Nebula. It appears as a trapezoid, with four bright stars at unequal distances. A closer look will show six distinct stars, and an even closer look will show more. A bluish nebulosity shines throughout this grouping, and a 3 dimensional appearance can be seen under high magnification.

A fun object with moderate difficulty to see is the **Eskimo Nebula**, also called **NGC 2392**. This object is in the constellation Gemini and is 9th magnitude, with a 10th magnitude central star. Nebulosity encircles the central star, and when closely scrutinized the observer will see a face and the fringe of a parka. Thus, the Eskimo.

Difficult Objects

Orion provides a nearly impossible object to view optically. It has been done, though. **The Horsehead Nebula** is an object which shows nicely in photographs, but most observers have never seen it visually. It takes an extremely exceptional night of clear, still air and no Moon. It also takes a fairly large aperture telescope and much patience. If you have the opportunity to view this object, take it, but don't be disappointed if you don't see it. It is quite a task.

Canis Major provides another difficult object to view. It is the companion to Sirius, **Sirius B**. Sirius B is said to be observable in a 10-inch reflector, but according to *Burnham's Celestial Handbook*, "The air, however, must be very steady. With reflectors of the usual 4-vane diagonal-holder type, the image of the companion may also fall on one of the diffraction rays, where it is totally lost. The observer should determine the expected PA beforehand, and the telescope should be oriented so that the companion will fall between the diffraction spikes." Sirius is -1.5 magnitude and Sirius B is 8.6. You can see how Sirius will easily outshine its companion.

Winter Planets

Mercury will not be visible during the winter months this year. Look for it again after sunset starting in May.

Venus is behind the sun in January, and will not be visible again in the evening sky until April.

2002 is a non-opposition year for **Mars**, which disappears from the sky during January, and will not return again until August. From September on, it will be visible low in the morning sky.

Jupiter is at opposition on January 1st, and continues to dominate the evening sky in Taurus until May, by which time it will be lost behind the sun.

Saturn is also in Taurus alongside Jupiter, which it will lead into the twilight by May. The best telescopic views of the fantastic ring system of this huge planet will be in early evening, before it sets by midnight in March.

Uranus and **Neptune** are lost behind the sun this winter. Look for them again starting in August. Begin looking for faint **Pluto** from March to August.

Dates to Remember

January

- 1: New Year's Day
- Jupiter at Opposition
- 3: Quaranid Meteor Shower
- 6: Moon at Last Quarter
- 13: New Moon
- 21: Moon at First Quarter
- 28: Full Moon

February

- 4: Moon at Last Quarter
- 8: Alpha Centaurid Meteor Shower
- 12: New Moon
- 14: Valentines Day
- 27: Moon Full

March

- 6: Moon ast Last Quarter
- 14: New Moon
- 17: St. Patrick's Day
- 20: Vernal Equinox in Northern Hemisphere
- 22: Moon at First Quarter
- 28: Moon Full
- Passover
- 31: Easter

*Brenda Culbertson
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Flame Nebula and Horsehead Nebula Surrounding Zeta Orionis

Image copyright
Roy Herrman
Shawnee, KS



M42 NGC 1976

Trapezium Area of Great Nebula in Orion

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M41 NGC 2287

Open Cluster in Canis Major

Image copyright
Ed Flaspoebler
Dallas, TX



M45

The Pleiades Star Cluster in Taurus

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Roy Herrman
Shawnee, KS





AAAA Establishes Online Discussion Group

The American Association of Amateur Astronomers has started a new online discussion group, hosted by Yahoo Groups.

The purpose of the group is to create a forum in which AAAA members can share ideas, experiences and challenges, and just get to know each other. If you are an AAAA member, or have friends interested in amateur astronomy and the AAAA, we invite you and them to become a part of this Discussion Group. The Quad-A eGroup now has 120 members.

If you would like to join the AAAA discussion group, please send an e-mail request to: Quad-A-subscribe@yahoogroups.com or visit the web site at: <http://www.yahoo.com/groups/list/Quad-A/info.html>

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June 6-9, 2002

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